

**Abstract of the Disclosure**

[0057] A dispersion and dispersion slope compensating optical fiber includes a segmented core and a cladding layer wherein the refractive index profile is selected to provide a dispersion having a maximum deviation of less than 7 ps/nm-km over a wavelength band from 1550 nm to 1610 nm. According to a further embodiment of the invention, a dispersion compensating optical fiber is provided having a refractive index profile with a central core segment having a positive relative refractive index; a depressed moat segment on a periphery of the central core segment having a relative refractive index that is more negative than  $-1.2\%$ ; and an annular ring segment outward from the depressed moat segment having a relative refractive index that is greater than  $1.2\%$ .